



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1966

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

W6IFE Newsletter

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The **6 September 2001** meeting of the SBMS will be 1) a Reconnoiter for the second half of the 10 GHz and Up Contest; 2) Notes from Ken, WB6DTA on operating from Glamis; and 3) New equipment review by Dave, WA6CGR on the new Garmin E-Teck Vista do all-be all hand held GPS, compass and barometric altimeter. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

Last meeting Robin, WA6CDR lead the planning work on the first weekend assault of the 10 GHz and Up contest planning.

The Prez Sez--Hope everyone had a good time on the first weekend of the 10 GHz and Up contest and is getting set for the second half. We had a lot of new stations active and several in the wings almost ready to go. That's very exciting. Thanks to all those who did the planning and made special efforts to make it a success. I know a lot of us like to just go out and do our own thing and I appreciate people changing their plans to support the club effort.

This month, of course, is the Microwave Update in Santa Clara. I hope as many go as can. Besides hearing good talks, you get a chance to talk with and meet people you have heard about and read about. It is also a chance to network with others who are doing things you might want to do. Active amateurs in microwaves is a very small group and the chance to mix with other hams that have the same interest from all over the world is a rare thing. So, if you can, go.

See you there. Doug, K6JEY

Scheduling

8 September ARRL September VHF Contest

15-16 September ARRL 10 GHz and Up Cumulative contest 2nd half

27-30 September Microwave Update check www.microwaveupdate.org for info.

4 October Review of the Microwave Update Convention with pictures.

1 November Frank Kelly on "PLL Local Oscillator Design Notes"

6 December Tentative: Practical Radio Astronomy at Microwave Frequencies.

3 January Chip N6CA: Dish Evaluation with a Laser Pointer

February-- 24 GHz status review. Presentation by various members on the status of their 24 GHz stations. Frequency and power measurement test set-ups will be available for member's radios.

Banquet at the Guasti Cafe. With white elephant exchange and door prizes! (And good food)

March-- Noise Figure seminar- review of techniques with testing available through 24 GHz.

Wants and Gots for Sale

For Sale: 1. Icom IC-746. \$1050. Used once on 10 meters. Full output, all the original stuff that it came with. 2. Radio Shack HTX 10 for \$85 a small 10 meter only transceiver. Great for portable Microwave gear. Same as used by WA6CGR in his 10 Gig rig. Never used. Changed my mind on that project Bob Robert Gardner w6sya@earthlink.net .

For Sale: Un-modified MA/COM units; 10 mtr HTS 100; 2-mtr DEM transverter, MA/COM dish, tripod Ed K6ODV 909-689-1339

Want sensor head for thermistor head for HP 432 MeI, WA6JBD 909-369-6515.

Want service manual for Systron Donner 1502 Signal Generator Sam K6VLM.

Want HP 1 MHz/ 10 MHz 101A manual or circuit, Dick WB6DNX 714-529-2800.

Email stuff of interest-

Hello Microwavers, The results of the MDS/ERP Workshop at the July 28, 2001 SBMS/SDMG

Picnic are now posted on the SBMS Web pages, along with the results of the July 2000 Picnic Workshop and the 2001 and 2000 Workshops at N6IZW's QTH in La Mesa, CA (San Diego area). These results are in spreadsheet form, and are in Adobe Acrobat format. You will need an Adobe Acrobat Reader program to view or print them out. To see the results go to <http://www.ham-radio.com/sbms/> and then drop down to the Technical

Information/Papers section, and then to the "Technical Papers from the San Diego Microwave Group". They are under the heading "MDS/ERP Event Results. 73s from Ed Munn, W6OYJ (858) 453-4563

My Fellow Microwavers, for those who have Palm Handhelds, I have written a new distance/bearing calculator program that runs on the Palm. I call it Grid Locator or GL. I know that W1GHZ has a BD for the Palm. I think GL is more flexible. (Paul, if you are reading, this version has one minor fix from the one you saw.) I wrote it mainly for use in the ARRL 10 GHz contest. My program, GL, has many features. You can enter locations either as a Maidenhead grid or lat/long. The location entry can be done in many formats. It calculates the distance both from lat/long endpoints and from Maidenhead grid square centers. Lists of locations can be saved as Memo Pad memos in a format that the program understands. A location can also be saved from the program into one memo. It has some built-in help. I think the program will run on any device that used the Palm OS, 2.0 or higher. I'm making it available for free. You can read more, and download it at: http://www.dnai.com/~rexa/Projects/gl_dist.html. Send me email with any comments, suggestions, or problems. I am also seeking any corrections or additions to the location list entries. I'll track the info and make any new lists available on my page. You can send me the information in any format that works for you. -Rex Allers, KK6MK Microwave mailing list microwave@walmba.org.

I enjoyed reading the article on the SBMS re-printed from the San Bernardino Sun, and would like to forward it for re-printing with the Anchorage ARC Newsletter [largest club in Alaska with a big readership; I'm a life member]. Proper credit can be given to both the "Sun" and SBMS. Ed, a17eb

Hi, I just received my newsletter for July and realized I have not written in awhile. I have been absorbed in building my AO-40 station thru the spring and early summer. I am now operational on mode-US {435-up/2401-dn}. I have a DEMI 144/1268 TX conv that remains to be tested and installed for mode-LS. So anyone in SBMS that is equipped for satellite on AO-40, I would look forward to a QSO.

On my attempt to receive the Kodiak Island 10.260G beacon, I tried listening in mid-June from an excellent 800-foot viewpoint looking over the water [Homer to Kodiak, AK: 133 miles] using a 0.8 dB NF preamp, N1BWT mixer, and gunn oscillator. I used the wbfm 76-108 MHz band in my FT-817 for the IF but merely found all the local FM broadcast stations [above 88 MHz]. Curt Law, AL7LQ, owner of the beacon isn't sure of his frequency so I have a +/- 10 MHz search bandwidth which makes it very difficult. Well

my first attempt was casual using only the M/A 17 dB horn. I should get back down to Homer this month and take an 18-inch DSS dish this time. Maybe look with narrow bw for the carrier.

I've been traveling this month: SARA conference at NRAO Greenbank, WV and CSVHFS in Dallas. Got some parts from Jeff Kruth, WA3ZKR, at Greenbank, and saw Chip, N6CA in Dallas but didn't get the opportunity to speak with him. I did get a chance for parking lot 10G QSO's with NE8I and WD4MUO

using my portable station [FT-817, DEMI xvtr]. Also acquired some "stuff" in the surplus tour and flea market: DEMI 10G preamp kit, 3456-xvtr kit, and a second 24G up/dn harmonic conv. The 3456 xvtr is for the first IF on 24G. Also picked up some odds and ends, as well.

Speaking of equipment, Kerry graciously sent me 10 MHz TCXO's, xcvr boards, 1w PA, and Alford slot antenna for a 10G beacon in June. Waiting for info from Kerry on converting the boards. Hope I can somehow complete the beacon and install it at work on the 120-foot comm tower before winter. It is LOS to the hillside [2000-foot] above Anchorage 60 miles to the north. There is KL7FZ north of Anchorage, AL7LQ in Kodiak both with gunnplexers, and a local friend, WL7BQM, [30 miles from me] who is looking into getting the DEMI 10G xvtr and 2w PA.

I have my airline and hotel reservations made for MW Update. I still need to find a cheap hotel for Wed night 9/26 [arriving at San Jose Airport at 7 pm]. I will rent a car or SUV for the week driving down to southern Cal with hopes to visit in Ridgecrest and Barstow before coming to the SBMS meeting on 10/4. I will have my portable 10G station with me and would like to try making some contacts. I should have the 1w PA installed and

maybe the new preamp. It will be a miracle, but perhaps the 24G xcvr will be done, too. It uses the 10.368G xvtr as LO.

If possible, I would like to squeeze in a visit to Goldstone. I wonder if Dick Kolbly is reading this and would know? This will be my first visit to California since leaving for Alaska in 1979...22 years! Looking forward to reunion of old friends and acquaintances!

Well, that's the news from up north. Ed AL7EB, ex-K8MWA

There is available waveguide dish feeds for 4 foot and 6 foot dishes of the splash feed nature commercially made for the 5.9 to 7.2 GHz range, and the 10.6 to 13.3 GHz range in both finished and nearly finished variety. The feeds are made by Terra Comm and are aluminum construction for lightweight construction. Feeds could be cut back to smaller dishes dimensions and a transition made in the WG is long enough. Additionally I have available several TWT's for the 5.6 GHz range at 10 watts or better by cranking up on the "beam" current as there is lots of life in these tubes. Both Siemens RW-1125D with power supply, and Thompson TH3545C with power supply types are available. These are located in San Diego, Contact Chuck Houghton WB6IGP by e-mail or LL 619-460-7266 for further info/details.

Hello Microwavers, A new Qualcomm modification article has been posted on the SBMS web pages. The article by Chuck Houghton, WB6IGP, describes how to modify the small Qualcomm Multiplier pcb (1 5/8 by 2 3/4 inches) so that it will multiply the 2.5XX GHz output of a synthesizer, X4 to the 10.224 to 10.368 GHz range. Output of +7 to +10 dBm can be achieved. The modification involves extending the length of three stripline filter elements to cover the 10 GHz output range. The board originally multiplied 2.6 GHz X5 to about 13 GHz. The article can be accessed by going to the SBMS web home page at <http://www.ham-radio.com/sbms/> and then scroll down to the "Technical Information/ Papers..." section and then to the "Technical Papers from the San Diego Microwave Group". 73s from Ed Munn, W6OYJ

San Diego 10 GHz Beacons Reactivated-- The 10 GHz cw beacon has been repaired and is now operating on Mt. San Miguel, southeast of San Diego in Grid Square DM12MQ. The Lat/Lon is 32 deg 41.80 min North and 116 deg 56.09 min West. Frequency is 10,368,070 MHz +/- 10 KHz and call sign is WB6IGP/B.

A second beacon also emits from this site using wbfm cw on a frequency of 10,250 MHz with call sign N6IZW/B. 73s from Ed Munn, W6OYJ (858) 453-4563

Hello Microwavers, Several have asked for more details about the San Diego Beacons on Mt San Miguel (Grid DM12MQ). Both beacons have +14 dBm output to a waveguide slot antenna with 16 total slots, estimated gain of 10 dBi. The waveguide has no wings so the omni directional horizontal pattern has dips and peaks. Polarization is horizontal. The location altitude is approximately 2565 ft. The source for the narrowband beacon on 10,368.070 MHz, +/- 10 KHz, is a "brick" oscillator phase locked to an internal approx 100 MHz crystal oscillator. The crystal is heated but we have experienced daily frequency variation due to external temperatures as indicated by the +/- range stated above. We also expect a gradual downward drift due to crystal ageing based on past experience. This beacon has cw id call sign WB6IGP/B. The source for the wideband MCW fm beacon on approximately 10,250 MHz is a Gunn Oscillator and may move around +/- a few MHz with temperature changes. Its MCW call sign is N6IZW/B. We have plans for a more advanced beacon system in the future, but felt it was more important to get these beacons back on the air in time for the 2001 microwave contest weekends. 73s from Ed Munn, W6OYJ

From the first weekend of the 10 GHz and Up contest--

On Saturday I set up on Pinal Pk, AR at dawn and found the path to anything north of about Toro was badly shadowed by an adjacent ridge. I worked the folks on Mt Laguna, CA and Borrego, and then tore down and moved the forklift-based radio over to the adjacent hill - known as Signal Pk. Trees are a MAJOR problem. We found a semi OK spot where we could see in between the trees. It worked OK, but the RX could see too much ground noise, so I suspect I was still a bit shadowed. I made 21 QSOS Saturday, with an AVERAGE distance of 445 KM! Longest to Frazier, 764 KM - a Boeing based path. REALLY pleased with the turnout on east looking

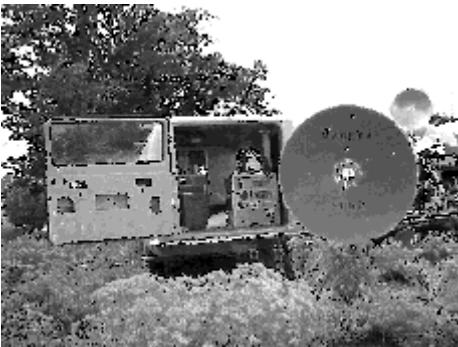
sites - 5 San Diego folks on Laguna, Onyx - 3, Borrego and Hwy 74, etc.as well as the rover folks along I 10 - tuff in the heat!

I tore down Saturday night and moved to Mt Lemmon, AR and arrived there at dawn also (What is Sleep??). Thanks to the arrangements made by (I HOPE this is right) Steve, Mike, Dave and Chuck, I had permission to go on the observatory grounds... otherwise, Lemmon is not a useful microwave site-

way too many trees - We found ONE spot with about a 20 degree opening in the trees looking in the right direction. I made 26 QSOs, including several with local folks. We sent Dave, W7GZ out with WA6CGRs loaner radio - and he had some fun making contacts locally, as well as working Dave and Mel using rain scatter off a thunderstorm. I think the bug bit. Later worked Dave, Mel, and Pete in several rover stops in the Parker to Blouse to I-10 region. Average distance Sunday, 294 KM (a fair number of short QSOs), BUT. Longest again to Frazier, 772 Km (498 Miles), Again courtesy of Boeing. Thanks Robin, WA6CDR



Robin, WA6CDR had a "portable" station consisting of a large tripod, 6 ft dish, rack mounted transverter and TWT, Kenwood multimode transceiver and a minivan to contain it. Robin made 3 mountain peaks in Arizona during the first weekend of the 2001 ARRL 10 GHz and Up Cumulative Contest. WA6CDR photo.



From the DM14PE site on Onyx Peak, CA, Chuck's WA6EXV station could be seen. Chuck has a 4 ft dish, 40 W TWT and a Noise Figure of about 1 dB. Photo thanks to WA6EXV.



A station on Onyx for the first half of Saturday 18 August was rover Glenn, KE6HPZ with his 27-inch dish mounted on a tripod. His equipment was very portable. His power source was a

battery along with a solar panel. Glenn's rig put out a strong signal across the desert from Onyx. He also went roving on the desert floor in the triple digit temperatures. His travels took him east of Onyx into Arizona. WA6EVX photo.



Another station on Onyx was Bill, WA6QYR with his trailer mounted 4 ft dish, newly constructed Qualcomm 10 GHz transverter, and TS-700A two-meter multimode transceiver. The Qualcomm has about 6 dB NF and something under a watt output. Bill was battery powered. He had 24 GHz wide band gear, but it wasn't used since the rovers and stations to the east only seemed to have 10 GHz equipment. WA6EXV photo.



One of the problems noted by several mountain toppers is the window between trees on some sites. Onyx some 15 years ago had a wonderful view to the east, but now has a number of large attenuators growing around the area. Choices, choices. There was a site a little further south that had a larger view south and east, but didn't see to the area where WA6CDR was to operate. This site could see about 30-degree window into Arizona where Robin and others were to be. To work the rovers we had to look through the trees to the right. Behind us was another group of trees blocking the view of Mt San Gorgonio over which we might view the LA area. We could see northwest to Mt Frazier and Big Bear Lake.



As indicated earlier, the view to the south from the chosen site looked into trees and the County communications site on Onyx. At 9115 ft the view could be great in some directions. It was nice and cool relative to those operating on the desert floor that weekend when the temperatures were 105 and better. Even with a good site, you run into the problems of several stations blocking each other in some direction when trying to make contacts with stations operating from areas 360 degrees from the site. Any way we had fun and made lots of points for the distant operators, but maybe not as many as those who stayed in the larger populated areas.



I operated 10 GHz on Saturday only from Frazier "hill", DM04ms, to make 20 contacts with 17 call signs. Best DX was an aircraft scatter contact with WA6CDR on Pinal "mound" DM43og at 480 mi to the east (that's 772 km for the east coasters). The Southern California X band activity level was as high as I've seen it.

The picture shows the whole Frazier group from Saturday. From left to right, Gary AD6FP, Frank WB6CWN, Miguel W6YLZ and Frank W6PI.

Frank WB6CWN

I've put a few photos from the contest up on a web site. <http://www.pe.net/~swanberg/10ghz.htm>. Mel WA6JBD

Hi Bill,

How did the contest go?? I went roving with 10 GHz and 24 GHz ssb and had a good time. Only 2 other stations on 24 GHz so there were limited opportunities there. I have a project, which requires a Macomm (the old 10 GHz unit in the tub) Do you still have yours and would you be willing to sell it. (I am actually looking for 2 units, so if you know of anyone else who would sell their unit let me know). If you will sell, what price do you want\$\$\$???

73 Phil, W6HCC

73's Bill

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast. Dues are \$15 per year which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page. If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, bburns@ridgecrest.ca.us, or phone 760-375-8566. The newsletter is generated about the 15th of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

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